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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,899	07/09/2003	Seong Soo Jang	CU-3282 RJS	9848

26530 7590 09/22/2006

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EXAMINER

KORNAKOV, MICHAIL

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/615,899	JANG ET AL.	
	Examiner	Art Unit	
	Mikhail Kornakov	1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/06/2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 11 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' reply dated 07/06/2006 is noted. The submission of certified translation of the Korean priority document is acknowledged. Since Applicants complied with the provisions of 37 CFR 1.55 (a)(ii), the reference to Moon (U.S. 2004/0013818) is removed from the scope of the rejection.
2. Claims 1, 11, 12 are currently pending and examined on the merits.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 11, 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Ameen et al (U.S. 6,635,569).

Ameen teaches a method of stabilizing CVD process chamber upon exposing the chamber to TiCl_4 (reads on chlorine-containing deposition gas). The method of Ameen comprises the steps of generating a plasma from $\text{NH}_3/\text{H}_2/\text{Ar}$ gaseous mixture in the chamber, thus producing hydrogen, nitrogen and argon plasma species, to remove any remaining contaminants from the chamber. The ratios between plasma ingredients (hydrogen, nitrogen and argon) correspond to the instantly claimed values (col. 5, lines

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12-15; col. 9, lines 5-9; col. 11, lines 15-20). Therefore, all the limitations of the instant claims are met by Ameen.

Response to Arguments

5. Applicant's arguments filed 08/18/2006 have been fully considered but they are not persuasive.

Applicants argue that "et al." suffix is omitted in a reference name. The office action dated 04/06/2006 has been reviewed and no such omission was found. Applicants are kindly asked to point out where such omission is occurred.

Applicants also argue that Ameen teaches the use of NF_3 , ClF_3 or Cl_2 to clean a reaction chamber but it does not teach the use of either hydrogen/argon plasma or nitrogen/argon plasma to clean a reaction chamber, as pending claim 1 clearly requires. This is not found persuasive, since pending claim 1 does not require the use of either hydrogen/argon plasma or nitrogen/argon plasma, but it requires generating a plasma that includes hydrogen and nitrogen and argon, which is clearly met by Ameen.

Applicants argue that Claim 1 recites that a hydrogen/argon plasma is used to remove residuals from the reaction unit. The residuals that remain the reaction unit are chlorine-containing gases that were used in the reaction unit during either an etching or deposition process but prior to cleaning. This is not found persuasive since the features upon which applicant relies (i.e., hydrogen/argon plasma; residuals that remain the reaction unit are chlorine-containing gases) are not recited in the rejected claim.

Although the claims are interpreted in light of the specification, limitations from the

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specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicants also argue that claim 11 recites the formation of a nitrogen/argon plasma to remove residual, chlorine-containing gases from a reaction unit wherein etching and deposition is carried out using chlorine containing gases. This is not found persuasive since claim 11 does not recite a nitrogen/argon plasma, but recites the plasma, which includes nitrogen and hydrogen. It also lacks the limitation "chlorine containing gases", as argued by Applicants.

Applicants also argue that claim 12 requires that the plasma is to "remove a residual remaining in a reaction tube," i.e., chlorine-containing compounds. This is not found persuasive since the feature upon which applicant relies (i.e., residual that remain the reaction unit are chlorine-containing gases) are not recited in the rejected claim. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mikhail Kornakov whose telephone number is (571) 272-1303. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Mikhail Kornakov
Primary Examiner
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09/15/2006